

## APPENDIX C: Technical Notes

### I. Survey Response Rates

SURVEY RESPONSE RATES*			
<u>Year</u>	<u>Self-Report Rate</u>	<u>Year</u>	<u>Self-Report Rate</u>
1967	97.3	1983	95.5
1968	97.6	1984	95.1
1969	96.6	1985	94.8
1970	98.1	1986	93.5
1971	97.5	1987	93.1
1972	97.3	1988	92.9
1973	97.5	1989	92.3
1974	94.2	1990	93.6
1975	97.3	1991	94.6
1976	97.2	1992	95.1
1977	96.6	1993	94.7
1978	96.3	1994	94.6
1979	96.4	1995	94.1
1980	96.2	1996	92.8
1981	95.7	1997	91.5
1982	95.3	1998	91.5

\* The rates for 1967-1997 reflect late responses. The rate for 1998 may increase slightly in the next year if additional questionnaires are received after survey closure. Self-report rates for 1980-1998 are determined from the "source of response" indicator in the doctorate records. Because this indicator was not coded prior to 1980, survey forms for 1965-1979 are assumed to be self-reported if "month signed" or "marital status" is present. "Marital status" is not available from sources other than the doctorate recipient.

As shown in the table above, 91.5 percent of 1998 U.S. doctorate recipients completed survey forms. This percentage is what has been referred to as the "self-report" rate. For the remaining doctorate recipients, "skeleton" records were created using basic information obtained from doctorate granting institutions or from commencement programs. This skeleton information includes Ph.D. institution, Ph.D. field, Ph.D. year, and sex of Ph.D. recipient. It should be noted that the sex variable was not always available even for survey respondents. Every effort was made to obtain this information for as many respondents as possible, but for a small percentage, this could not be done with confidence. Thus, you will notice that there are missing data for many of the tabulations involving gender in this year's report. Prior to 1997, whenever gender was missing, the data were assigned to "male." In 1997, it was decided to discontinue this practice. However, for consistency with previously published results from earlier reports, this procedure was used for years prior to 1997 in all trend tables. The tabulations involving gender for 1997 and 1998 exclude missing cases except where noted otherwise.

Wherever possible this report includes data from all Ph.D. records whether complete or skeletal; thus the reported total number of Ph.D. recipients for 1998 (42,683) includes both respondents and non-respondents. It

Wherever possible this report includes data from all Ph.D. records whether complete or skeletal; thus the reported total number of Ph.D. recipients for 1998 (42,683) includes both respondents and non-respondents. It should also be noted that, in keeping with the practice of earlier data collection cycles, counts for previous years were corrected by the addition of data from surveys received after the close of data collection for a given year. In this year's cycle, this will particularly affect the 1997 data and analysis because, in addition to the changes engendered by adding data from questionnaires for 1997 doctorate recipients that arrived after the 1997 closing date, 150 cases originally coded as 1997 doctorate recipients were determined actually to have received their doctorates in the 1998 academic year and were recoded accordingly. This has an effect not only on the overall count of doctorate recipients for 1997 but on the response rates and analyses of individual variables, most notably on the variable PHDFIELD which indexes field of doctorate. The reader will therefore note differences in the values reported for 1997 in the trend tables of this year's summary report compared to the 1997 Summary Report. For comparison, both the original and revised response rates for 1997 are included in the table of response rates shown below.

## **II. Item Response Rates**

The table on the following pages shows the response rates for each item in the Survey of Earned Doctorates for 1988-1998. The numbers and percentages shown in the tables and figures in the body of the Summary Report are based only on the number of doctorate recipients who responded to the applicable survey items. For crosstabulations, the response rate for a given tabulation will be no greater than the lowest response rate for the items involved in the tabulation.

For additional technical information on the Survey of Earned Doctorates, please contact

The Doctorate Data Project  
National Opinion Research Center at the University of Chicago  
1155 East 60<sup>th</sup> Street  
Chicago, IL 60637

Phone: (312)759-4031  
Email: [4800-sed@norcmail.uchicago.edu](mailto:4800-sed@norcmail.uchicago.edu)

## II. ITEM RESPONSE RATES, 1988-1998

Variable													
Name	Field	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997 (Prelim)	1997 (Adjusted)	1998 (Prelim)
PHDFICE	Ph.D. FICE Code	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	NA	NA	NA
RACE <sup>a</sup>	Race/Ethnic Group (Recoded)	90.6	90.2	93.9	95.3	95.6	96.2	97.1	96.6	95.8	92.5	92.9	93.3
PHDENTRY	First Grad. Year in Ph.D. Instr.	NA	NA	NA	NA	NA	86.9	86.7	86.5	85.5	78.4	78.3	83.3
SRCE1ED <sup>b</sup>	Primary Source of Support (Edited)	83.3	82.5	78.1	77.6	69.7	66.2	72.4	74.9	87.9	87.2	87.1	88.1
PDWK1ED <sup>c</sup>	Primary Work Activity (Edited)	61.4	61.4	56.2	55.9	55.7	54.7	56.3	56.6	60.8	60.0	59.9	60.8
		(92.6)	(92.4)	(83.8)	(83.8)	(83.5)	(83.3)	(86.1)	(86.8)	(93.3)	(94.4)	(92.8)	(93.0)
PDWK2ED <sup>c</sup>	Secondary Work Activity (Edited)	38.9	39.2	39.5	39.5	37.4	36.7	38.2	38.4	48.5	51.4	51.3	52.0
		(58.6)	(58.9)	(58.9)	(59.3)	(56.0)	(55.8)	(58.4)	(58.8)	(74.4)	(80.9)	(79.6)	(79.7)
EDFATHER	Father's Education	88.8	88.3	90.8	92.3	93.1	92.7	92.7	92.3	91.4	88.8	88.7	89.4
EDMOTHER	Mother's Education	88.2	87.5	90.5	92.2	93.0	92.6	92.5	92.1	91.6	89.1	89.0	89.6
BIRTHYR	Year of Birth	95.8	92.4	96.6	98.2	97.7	97.3	98.2	97.5	96.8	92.5	92.8	93.5
BIRTHPL	Place of Birth	92.5	91.8	92.1	94.1	95.1	94.9	94.8	94.5	93.0	89.9	89.8	90.5
SEX	Sex	100.0	100.0	100.0	99.6	99.4	99.2	99.6	99.6	99.5	99.1	99.2	99.6
MARITAL	Marital Status	91.6	91.0	91.7	91.5	92.0	91.6	91.5	91.0	91.6	88.6	88.5	89.9
DEPENDS	Number of Dependents	85.8	85.8	90.0	89.5	89.8	89.8	89.7	89.4	89.4	87.6	87.5	88.4
CITIZ	Citizenship	92.9	92.3	96.2	97.9	97.6	97.1	98.2	97.9	96.9	91.5	92.4	92.7
CNTRYCIT <sup>c</sup>	Country of Citizenship	20.8	21.7	26.4	29.2	30.3	30.2	31.9	31.3	31.3	25.7	25.6	26.3
		(89.3)	(90.1)	(97.2)	(98.0)	(98.5)	(98.6)	(99.3)	(99.4)	(98.5)	(96.5)	(95.3)	(99.0)

NOTE: NA = not available.

<sup>a</sup> The percentage represents the race/ethnic groups standardly reported by the Doctorate Data Project; multiple and "other" races are excluded.

<sup>b</sup> As of FY 1996, the percentage includes recipients who said they had no primary source of support.

<sup>c</sup> The percentages on the first line are based on the total doctoral cohort for a fiscal year. The percentages on the second line (enclosed in parentheses) are based on the number of recipients who reported plans for postdoctoral employment.

Variable		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997 (Prelim)	1997 (Adjusted)	1998 (Prelim)
Name	Field												
RACERAW <sup>a</sup>	Race/Ethnic Group	90.6	90.2	93.9	95.3	95.6	96.2	97.1	96.6	95.8	92.5	92.8	93.3
HANDICAP <sup>b</sup>	Handicap Indic. (incl. "No" from 1989-present)	1.7	91.0	92.4	93.4	93.9	93.6	93.7	93.3	91.7	89.4	89.3	97.9
HSPLACE	Place of High School	90.6	89.8	90.8	93.5	94.5	94.0	93.9	93.5	92.1	89.5	89.4	90.5
HSYEAR	Year of H.S. Graduation	89.2	88.5	90.5	90.9	92.1	92.1	91.7	91.6	90.4	88.3	88.3	93.8
JRCOLL	Jr. Coll. Indic. (incl. "No")	90.2	89.1	90.8	92.0	92.7	92.9	92.5	92.3	90.5	90.8	90.7	99.9
REGNURSE <sup>c</sup>	Registered Nurse	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CEPLACE	Place of College Entrance	90.5	90.3	90.8	91.8	92.7	92.8	92.3	92.1	90.5	81.9	81.8	90.1
CEYEAR	Year of College Entrance	89.7	89.3	90.1	91.3	92.2	91.7	91.5	91.2	89.0	82.0	81.9	88.4
BAINST	Baccalaureate Institution	96.1	94.4	95.7	96.5	96.4	96.3	96.6	95.8	94.9	88.6	89.0	90.4
BAFIELD	Field of Baccalaureate	90.6	90.3	91.0	92.3	92.4	91.9	91.6	90.9	89.2	82.1	82.0	83.9
BAYEAR	Year of Baccalaureate	95.4	93.2	95.0	95.5	96.0	95.7	96.2	95.5	94.7	87.7	88.1	89.9
BANONE <sup>d</sup>	No Baccalaureate/Master's	0.7	0.6	1.1	1.1	0.9	8.6 <sup>d</sup>	9.1 <sup>d</sup>	9.7 <sup>d</sup>	11.4 <sup>d</sup>	6.9 <sup>d</sup>	6.9 <sup>d</sup>	8.1 <sup>d</sup>
GEYEAR	Year of Graduate Entrance	88.5	88.2	86.6	89.4	89.5	88.6	88.2	87.4	85.7	76.7	76.6	81.1
MAINST	Master's Institution	78.3	77.5	78.2	78.4	79.0	78.6	78.9	78.0	77.2	72.0	71.9	72.8
MAFIELD	Field of Master's	75.3	74.6	75.5	76.3	77.0	76.1	76.1	75.3	74.5	68.3	68.2	70.1
MAYEAR	Year of Master's	76.7	75.9	76.7	77.1	77.7	77.0	77.1	76.3	75.5	70.7	70.6	72.5

NOTE: NA = not available.

<sup>a</sup> The percentage represents the race/ethnic groups standardly reported by the Doctorate Data Project; multiple and "other" races are excluded.

<sup>b</sup> The percentages from 1985-1988 represent the numbers of Ph.D.s with handicaps. Beginning in 1989, the response rates include Ph.D.s who reported "no" handicap. Note: The definition of "handicapped" was much more restrictive in 1990 and 1991.

<sup>c</sup> Because this field is not applicable to all doctorate recipients, the response rate will always be under 100%.

<sup>d</sup> Because this field is not applicable to all doctorate recipients, the response rate will always be under 100%. Note; "No Baccalaureate/Master's" represents only "no baccalaureate" from 1983 to 1992. Beginning in 1993, it indicates that the Ph.D. held no baccalaureate and/or master's degree.

Variable		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997 (Prelim)	1997 (Adjusted)	1998 (Prelim)
Name	Field												
PROFDEG <sup>a</sup>	Type Professional Doctorate	1.1	1.3	1.3	1.6	1.6	1.6	1.7	1.8	1.9	1.9	1.9	1.2
PROFYEAR <sup>a</sup>	Year Professional Doctorate	1.1	1.3	1.3	1.6	1.5	1.6	1.7	1.8	1.9	1.7	1.8	2.8
PHDINST	Doctorate Institution	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PHDFIELD	Field of Doctorate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.5	100.0	100.0
PHDCY	Calendar Year of Doctorate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PHDMONTH	Month of Doctorate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PHDFY	Fiscal Year of Doctorate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PHDTYPE1	Type of Doctorate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	95.0	100.0	100.0
PHDTYPE2 <sup>a</sup>	Applied Research Doctorate	3.1	2.8	2.6	2.3	2.4	2.4	2.7	2.5	2.2	0.9	0.9	1.0
TOCEBA <sup>a</sup>	Time Out CE-BA	88.3	88.0	88.5	89.7	90.5	89.7	89.7	88.9	86.7	82.1	82.0	82.6
TOBAGE <sup>a</sup>	Time Out BA-GE	88.6	88.3	86.6	89.5	89.6	88.6	88.2	87.4	85.7	76.7	76.6	81.1
TOGEMA <sup>a</sup>	Time Out GE-MA	72.4	71.7	72.2	73.3	74.0	73.1	73.1	72.0	70.4	61.3	61.2	63.6
TOMAPHD <sup>a</sup>	Time Out MA-Ph.D.	71.4	70.1	65.2	69.9	71.1	69.9	70.0	69.0	68.1	67.5	67.5	65.1
TOGEPHD	Time Out GE-Ph.D.	85.7	84.7	77.4	84.0	84.5	83.1	82.5	81.8	80.2	75.9	75.8	74.9
TICEPHD	Time In CE-Ph.D.	85.2	84.1	76.7	83.4	84.3	83.0	82.9	82.4	80.8	75.1	75.0	78.0
YEARSFT	Full-time enrollment	71.2	69.3	83.1	73.9	75.7	75.7	75.2	74.5	77.1	82.1	82.0	89.4
YEARSPT	Part-time enrollment	71.2	69.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
YEARSOUT	Not enrolled	71.2	69.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHDDISS <sup>b</sup>	Field of Dissertation	91.0	89.8	NA	NA	65.0 <sup>b</sup>	92.7	93.3	92.4	92.0	88.5	88.4	89.8
SRCEPRIM <sup>c</sup>	Primary Source of Support	72.3	71.7	75.8	77.7	69.7	66.1	72.4	74.9	87.9 <sup>c</sup>	87.2	87.1	88.2
DEBTIND	Debt Indicator (incl. "No")	90.8	90.9	92.2	93.1	93.3	92.8	92.8	92.4	91.1	NA	NA	NA
PRESTAT	Predoctoral Status	91.2	90.7	92.4	93.5	93.5	93.1	92.9	92.5	91.7	87.6	87.5	89.7
PDOCSTAT	Postdoctoral Status	90.2	89.6	90.7	91.6	92.1	91.8	91.7	91.0	90.9	88.3	88.2	89.3
PDOCPLAN	Postdoctoral Plans	89.8	89.4	91.3	92.1	92.5	92.4	92.4	91.8	91.2	86.5	86.4	87.6

NOTE: NA = not available

<sup>a</sup> Because this field is not applicable to all doctorate recipients, the response rate will always be under 100%.

<sup>b</sup> The percentage was low in 1992 because 28% of the Ph.D.s completed earlier survey forms that did not request field of dissertation.

<sup>c</sup> As of FY 1996, the percentage included recipients who said they had no primary source of support.

Variable		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997 (Prelim)	1997 (Adjusted)	1998 (Prelim)
Name	Field												
PDREASON	Reason for Postdoctoral Appointment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PDSTDFLD <sup>a</sup>	Postdoctoral Study Field	22.6 (95.0)	21.9 (94.7)	23.2 (95.2)	24.4 (95.1)	24.3 (93.4)	25.1 (94.0)	25.3 (93.8)	25.0 (93.9)	25.4 (97.4)	25.4 (99.0)	25.4 (99.0)	25.4 (96.0)
PDSTDSUP <sup>a</sup>	Sources of Study Support	22.3 (93.8)	21.6 (93.6)	22.4 (91.8)	24.0 (93.4)	24.2 (92.9)	24.7 (92.4)	25.1 (93.1)	24.6 (92.5)	24.7 (94.9)	24.8 (99.9)	24.5 (100.0)	25.2 (95.8)
PDEMPLOY <sup>b</sup>	Type of Employer	63.5 (95.7)	63.9 (96.1)	63.6 (94.9)	63.3 (94.9)	62.9 (94.3)	61.4 (93.5)	61.1 (93.5)	60.9 (93.4)	61.4 (94.2)	59.8 (94.1)	59.7 (92.7)	61.7 (94.4)
PDWKPRIM <sup>b</sup>	Primary Work Activity	61.4 (92.6)	61.4 (92.4)	56.2 (83.8)	55.9 (83.8)	55.7 (83.5)	54.7 (83.3)	56.3 (86.1)	56.6 (86.8)	60.8 (93.3)	60.1 (94.5)	60.0 (93.0)	61.0 (93.2)
PDWKSEC <sup>b</sup>	Secondary Work Activity	38.9 (58.6)	39.2 (58.9)	39.5 (58.9)	39.6 (59.3)	37.4 (56.0)	36.7 (55.9)	38.2 (58.4)	38.4 (58.8)	48.5 (74.4)	49.4 (77.7)	49.3 (76.4)	51.1 (76.7)
PDEMPFLD <sup>b</sup>	Field of Employment	48.2 (72.7)	47.9 (72.1)	47.0 (70.2)	47.3 (70.8)	45.3 (68.0)	44.0 (67.0)	45.4 (69.4)	45.7 (70.1)	58.3 (89.6)	59.1 (93.0)	59.0 (91.5)	60.0 (91.9)
PDCONSID	Postdoctoral Appointment Consideration	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PDDECISN	Decision Against Postdoc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PDUSFOR	Postdoctoral Location US or Foreign	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.8	90.7	90.1
PDAFFIL	Postdoctoral Affiliation	68.6	68.3	80.0	89.6	94.4	93.8	94.6	94.1	92.6	NA	NA	NA

NOTE: NA = not available

<sup>a</sup> The percentages on the first line are based on the total doctoral cohort for a fiscal year. The percentages on the second line (enclosed in parentheses) are based on the number of recipients who reported plans for postdoctoral study.

<sup>b</sup> The percentages on the first line are based on the total doctoral cohort for a fiscal year. The percentages on the second line (enclosed in parentheses) are based on the number of recipients who reported plans for postdoctoral employment.

### III. Derived Variables

The following derived variables deserve further explanation.

#### Postdoctoral Plans to Stay in the United States

Starting in 1997, the planned postdoctoral location of doctorate recipients was coded in a new variable called PDLOC using FIPS codes for U.S. states and territories and countries. Values of PDLOC less than 100 indicate a postdoctoral location in the United States.

Also beginning in 1997, a dichotomous variable, PDUSFOR, was created to index whether the planned postdoctoral location reported by the respondent was in the United States or in a foreign location.

For years prior to 1997, this variable is based on PDAFFIL. The first character of PDAFFIL flags whether the respondent's planned postdoctoral location is in the United States; a numeric character in this position indicates a United States location. Non-numeric values in the first position of PDAFFIL (except "R") indicate non-U.S. locations. A value of "R" for PDAFFIL signifies the respondent's refusal to provide information.

For the interested user, the following SAS code produces "USPLAN" as an index of plans to stay in the United States following the doctorate using PDAFFIL1 (a variable created using the first character of PDAFFIL).

```
usplan=2; /* Outside the U.S. */  
if pdaffil1 in ("0","1","2","3","4","5","6","7","8","9") then usplan=1; /* U.S. */  
if pdaffil1 eq "R" then usplan=.;  
if pdaffil1 eq " " then usplan=.;
```

#### Firm Postdoctoral Plans

Postdoctoral Plans are coded using the values of PDOCSTAT which indicate that the doctorate recipients postdoctoral plans were definite at the time the survey was completed. That is, codes 0, 1, or A on PDOCSTAT indicate that the respondent had definite postdoctoral plans, whereas codes 2, 3, and 4 indicate that the respondent was still seeking to determine postdoctoral placement.

The following is the SAS code used to derive FIRMPLAN from PDOCSTAT :

```
if pdocstat in ("0","1","A") then firmplan=1; /* Definite */  
if pdocstat in ("2","3","4") firmplan=2; /* Seeking */  
if pdocstat eq " " then firmplan=.;
```

## **Firm Plans to Stay in the United States**

This variable is derived from USPLAN and FIRMPLAN. A respondent was coded as having firm plans to stay in the United States if the reported postdoctoral location was in the United States and the reported postdoctoral plans were coded “definite.”

The following is the SAS code that creates the variable FIRMUS from USPLAN and FIRMPLAN as described above.

```
firmus=2;  
if (usplan eq 1 and firmplan eq 1) then firmus=1;  
if usplan eq . or firmplan eq . then firmus=.;
```

## **Race/Ethnicity**

*Adjustments to numbers:* Readers should keep in mind that fluctuations in numbers for a racial/ethnic group reflect to some degree any upward or downward change in both overall survey response and response to the racial/ethnic item. Since 1990 response to race/ethnicity has shown great improvement -- a result of new procedures for following up missing information. Race/ethnicity was not followed up prior to 1990.

All follow-up responses received before survey closure are included in the data presented in the *Summary Report* for that survey. Responses arriving after closure are included in the next year's report. The extension of survey closure dates in the past four years has allowed most follow-up responses to be received in time to be included in the *Summary Reports* for those surveys. Postsurvey adjustments were greatest for 1990 and 1991 data, much less for 1992, and minimal for 1993. In 1994 response to the racial/ethnic item reached 97 percent by survey closure -- the highest rate ever. Any postsurvey adjustments for 1998 data will be included in next year's report, but they are expected to be very slight because of the extended closure. Updated numbers for all recent years appear in Appendix Table B-2 in this report.

*History of the racial/ethnic question:* Although this item was first introduced to the Survey of Earned Doctorates in 1973, over 25 percent of recipients in 1973 and about 13 percent in 1974 either completed earlier questionnaires or provided unusable responses. Since 1975 the racial/ethnic data have been more reliable, with response rates ranging from 90.1 to 97.1 percent (the latter in 1994). The information on race/ethnicity presented in this report is limited to the period 1977 to 1998.

The racial/ethnic question has undergone several revisions over the years. In 1977 it was modified to correspond to a standard question format recommended by the Federal Interagency Committee on Education and adopted by the Office of Management and Budget (OMB) for use in federally sponsored surveys; and explanation of the effect of these changes is detailed on page 13 of *Summary Report 1977*. (Note: Changes in the OMB guidelines prompted the reclassification of persons having origins in the Indian subcontinent from the white category to the Asian category.) In 1980 the question was further revised in two ways: (1) the Hispanic category was subdivided into Puerto Rican, Mexican American, and other Hispanic, and (2) respondents were



asked to check only one racial category. (Before 1980 doctorate recipients could check more than one category to indicate their race.) The item was modified again in 1982 to separate the questions on race and ethnicity. Since then, respondents have been asked to first check on of the four racial group categories (American Indian, Asian, black, or white) and then indicate whether or not they are Hispanic. *In this report, Doctorate Recipients who reported Hispanic heritage are classified as Hispanic regardless of their racial designations*; the remaining Doctorate Recipients are then counted in the respective racial groups. (Note: Doctorate recipients who checked the category “American Indian or Alaskan Native” are identified as “American Indian” in this report.)

## Time to Doctorate

*Total time to degree (TTD):* TTD measures the total elapsed time between the baccalaureate and the doctorate (including time not enrolled in school.) TTD can be computed only for individuals whose baccalaureate year is known. Baccalaureate year is often obtained from commencement programs or doctorate institutions when not reported by the recipient.

*Months are now included in the computation (see note below).*

*Registered time to degree (RTD):* RTD gauges the time in attendance at colleges and universities between receipt of the baccalaureate and the doctorate. Enrollment may include years of attendance not related to a recipient’s doctoral program. RTD can only be computed for individuals who provided all years of college attendance after the baccalaureate.

*Months are now included in the computation (see note below).*

**Note about medians:** The method of computing medians has been revised. Beginning with Summary Report 1994, **months** (of birth, baccalaureate, and doctorate) are included in the calculations whenever available; if months are missing, only years are used in the calculations. (However, medians are not computed for years prior to 1969 because doctorate month is unavailable for all Doctorate Recipients.) Medians presented in previous Summary Reports were based only on years. Some medians would be the same regardless of the method of computation, but the new method generally computes slightly different results. While differences are small (usually one- or two-tenths of a year), readers should consider these differences when comparing medians presented in the report with those in earlier reports.

## IV. Changes to the 1998 SED

### MARITAL

Beginning in the 1998 SED, response categories for the questionnaire item on marital status have been expanded from three to five choices. The table below illustrates this change.

Old version (SED 1997 and earlier)		New version (SED 1998 and later)	
Code	Questionnaire selection	Code	Questionnaire selection
0	Single, never married	1	Married
1	Married	2	Living in a marriage-like relationship
2	Separated, divorced, widowed	3	Widowed
		4	Separated/divorced
		5	Never married

Questionnaire selections “Single, never married” and “Married” map directly from the old version to the new version. These two choices present no problems of comparability across years. However, one category from the previous questionnaire forms, “2-Separated, divorced, widowed”, has been separated into two categories in the new version, “3-Widowed” and “4-Separated/divorced.”

### **SOURCE of FUNDING variables (Questions A11, A12)**

Before the 1998 SED, the source of funding variables, SRCE(A-M), SRCEPRIM and SRCESEC, took 35 possible numeric values, indicating specific funding sources that supported the respondent’s graduate education. A number of these numeric codes keyed to specific federal programs (e.g. Patricia Roberts Harris scholarships, NIH traineeships etc.). The new code frame reduces the respondent’s available choices to 13, and presents options as broad categories of funding sources (e.g. “federal government”), rather than specific programs (e.g. “NIH traineeship”).

The number of closed-ended answer choices offered at Question A11 corresponds with the total number of sources of financial support variables recorded on the DRF. To make the analysis of these data easier, SRCE(A-M) were converted to Yes/No/Don't Know questions, replacing numerical coding of specific college funding programs. Data users can perform straightforward frequencies on each source of funding variable, rather than running frequencies on 13 variables and summing the results to get the number of cases receiving funding from each of 35 sources.

To preserve consistency in coding over the two form types for 1998 SED, the coding system shown in the table below should be used to map the older codeframe into the new code frame.

<b>Old version (SED 1997 and earlier)</b>		<b>New version (SED 1998 and later)</b>	
<b>Code</b>	<b>Questionnaire selection</b>	<b>Code</b>	<b>Questionnaire selection</b>
80 81 89	Guaranteed Student Loan (Stafford Loan) Perkins Loan (formerly NDSL) Other loan - specify	a.	Loans (from any source)
91	Foreign (non-U.S.) Government	b.	Foreign (non-U.S.) support
12 29 33 40 44 49 53 55 60 61 69 70 71 73 78	University fellowship Other HHS NSF Fellowship Patricia Roberts-Harris Fellowship Title VI Foreign Language Other Dept. of Education USDA Fellowship NEH Veterans Administration Fulbright Fellowship Other/Specify (Other Federal Sup.) Ford Foundation Rockefeller Foundation Mellon Foundation Other Fellowship	c.	Fellowship, scholarship
		d.	Dissertation grant

<b>Old version (SED 1997 and earlier)</b>		<b>New version (SED 1998 and later)</b>	
<b>Code</b>	<b>Questionnaire selection</b>	<b>Code</b>	<b>Questionnaire selection</b>
10	Teaching Assistantship	e.	Teaching assistantship
11	Research Assistantship	f.	Research assistantship
22	NIH		
32	NSF		
52	USDA		
62	Other Federal Research Assistantship		
21	NIH Traineeship/Fellowship	g.	Traineeship
		h.	Internship or residency
		i.	Personal. savings
14	College Work Study	j.	Other personal earnings during graduate school
01	Own/Family Resources		
19	Other/Specify (University-Related)		
02	Spouse's Earnings	k.	Spouse's, significant other's, or family earnings or savings
03	Family Contributions		
90	Business/Employer	l.	Employer reimbursement/assistant
92	State Government	m.	Other specify
99	Other Specify		

In addition, the tabulations in this report further collapse the 13 new categories into 7 as follows.

1998 Summary Report Table Category	Raw Variables
1. Teaching Assistantships	SRCE-E
2. Research Assistantships/Traineeships/Internships	SRCE-F,G,H
3. Fellowships/Dissertation Grants	SRCE-C,D
4. Own Resources (loans + spouse + savings + work)	SRCE-A,I,J,K
5. Foreign Govt.	SRCE-B
6. Employer	SRCE-L
7. Other	SRCE-M

Because the new source of support variable code frame groups these sources somewhat differently than in the past, users should approach generalizations on trends in financing doctoral education with caution. For example, the table below breaks down the categories further. It pinpoints the source of the decline in the “Own Resources” category: the double-digit drop in the “Other personal earnings in graduate school” category. At the same time, it shows that the increase in doctorate recipients indicating they received fellowships accounts for almost all of the increased proportion of doctorate recipients in the category “Fellowships/Dissertation Grants.” While the earlier years’ data suggests a slight increase in the proportion of doctorate recipients indicating “Fellowships/Dissertation Grants” as their primary source of support, the one-year increase of more than 5 percent from 1994-1997 to 1998 raises questions. Again, data from another National Science Foundation survey, *The Survey of Graduate Students and Postdoctorates in Science and Engineering*, suggests that proportion of graduate students relying on fellowship aid has remained relatively flat since the early 1980s.

**Distribution of Responses to Source of Support Variable, 1990-1998**  
(SRCEPRIM used in these calculations)

Source of Support	1990-1993		1994-1997		1998	
	No.	Pct.	No.	Pct.	No.	Pct.
Loans (from any source)	2912	2.6	4150	3.1	2324	6.2
Foreign (non-U.S.) support	3020	2.7	3180	2.4	952	2.5
Fellowship, scholarship	9606	8.7	13905	10.3	5953	15.8
Dissertation grant	--	--	--	--	183	0.5
Teaching assistantship	19492	17.7	23694	17.5	6707	17.8
Research assistantship	28539	26.0	36701	27.1	9369	24.9
Traineeship	2487	2.3	2524	1.9	562	1.5
Internship or residency	--	--	--	--	55	0.1
Personal savings	--	--	--	--	1241	3.3
Other personal earnings during graduate school	28084	25.6	30618	22.6	4678	12.4
Spouse's, significant other's, or family earnings or savings	12786	11.6	14912	11.0	3905	10.4
Employer reimbursement/assistance	2072	1.9	2995	2.2	1184	3.1
Other	912	0.8	2624	1.9	586	1.6

Source: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates